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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/506,720	03/10/2005	Takeo Yamaguchi	NAII123496	5176
26389 7590 03/28/2007 CHRISTENSEN, O'CONNOR, JOHNSON, KINDNESS, PLLC 1420 FIFTH AVENUE SUITE 2800 SEATTLE, WA 98101-2347			EXAMINER RHEE, JANE J	
			ART UNIT 1745	PAPER NUMBER
SHORTENED STATUTORY PERIOD OF RESPONSE		MAIL DATE	DELIVERY MODE	
3 MONTHS		03/28/2007	PAPER	

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/506,720	<b>Applicant(s)</b> YAMAGUCHI ET AL.	
	<b>Examiner</b> Jane Rhee	<b>Art Unit</b> 1745	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 19 January 2007.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

**DETAILED ACTION**

***Rejections Withdrawn***

1. The 35 U.S.C. 103(a) rejection of claims 1-10 unpatentable over Asakawa et al. in view of Yamaguchi et al. has been withdrawn due to applicant's amendment filed on 1/19/2007.

***New Rejection***

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamaguchi et al. (EP 1202365) in view of Asakawa et al. (6565763)

As to claim 1, Yamaguchi et al. discloses an electrolyte membrane comprising a porous substrate (abstract), wherein the pores of the porous substrate are filled with a first polymer having proton conductivity thereby to impart proton conductivity to the electrolyte membrane (page 3 paragraph 0019) and the porous substrate is comprised of a I) a second polymer which is at least one selected from the group of polyolefins (teflon col. 3 line 27) a third polymer having a double bond in the molecule of the third polymer (polyimide col. 3 line 27).

Yamaguchi et al. fail to disclose that the porous substrate comprises a crosslinked second polymer wherein the second polymers are crosslinked with one another.

Asakawa et al. teaches that the porous substrate comprises a crosslinked second polymer wherein the second polymers are crosslinked with one another for the purpose of forming a heat resistant molecular structure that can be employed as a heat resistant polymer chain (col. 17 lines 23-25).

Therefore, it would have been obvious to one having ordinary skill in the art at the time applicant's invention was made to provide that the porous substrate comprises a crosslinked second polymer wherein the second polymers are crosslinked with one another in order to form a heat resistant molecular structure that can be employed as a heat resistant polymer chain (col. 17 lines 23-25).

As to claim 2, Yamaguchi et al. fail to disclose wherein the third polymer is of the polymers having an alicyclic skeleton structure. As to claim 3, Yamaguchi et al. fail to disclose wherein the third polymer is polynorbornene. As to claim 4, Yamaguchi et al. fail to disclose the second polymer comprises polyethylene. As to claim 5, Yamaguchi et al. discloses that the second polymer is polyethylene and the third polymer is polynorbornene.

Asakawa et al. teaches wherein the third polymer is of the polymers having an alicyclic skeleton structure (col. 14 line 21 discloses polynorbornene which has an alicyclic skeleton structure), wherein the third polymer is polynorbornene (col. 14 line 21) and wherein the second polymer comprises polyethylene (col. 14 line 16) for the

purpose of providing a block copolymer that is indecomposable against irradiation with an energy beam (col. 14 lines 10-11).

Therefore, it would have been obvious to one having ordinary skill in the art at the time applicant's invention was made to provide Yamaguchi et al. with the third polymer that is of the polymers having an alicyclic skeleton structure, wherein the third polymer is polynorbornene and wherein the second polymer comprises polyethylene in order to provide a block copolymer that is indecomposable against irradiation with an energy beam (col. 14 lines 10-11) as taught by Asakawa et al.

As to claim 6, Yamaguchi et al. teaches a porous electrolytic membrane for fuel cell wherein one end of the first polymer is bound to surface of pores of the porous substrate for purpose of the structure of the membrane to be supported by the substrate thus the polymer may not be easily released from the pores and the structure of the membrane is stable even at elevated temperatures unless the polymer is thermally decomposed (col. 5-6 paragraph 0035).

As to claim 7, Yamaguchi et al. teaches a porous electrolytic membrane for fuel cell wherein the pores of the porous substrate are filled with a two polymers (Yamaguchi et al. discloses a homopolymer and a graft polymerized polymer during the polymerization process paragraph 0033) having proton conductivity (col. 5 paragraph 0034, col. 4, paragraph 0023) for the purpose of providing desired proton conductivity to integrate the cathode and electrolyte so that the integrated product may facilitate the handling of the thin electrolyte membrane (col. 7 paragraph 0049 and 0050).

As to claims 8-10, Yamaguchi et al. discloses a direct methanol solid polymer fuel cell comprising the membrane disclosed above (abstract).

***Response to Arguments***

3. Applicant's arguments with respect to claims 1-10 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

4. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jane Rhee whose telephone number is 571-272-1499. The examiner can normally be reached on M-F 9-6.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Jane Rhee  
March 21, 2007



TRACY DOVE  
PRIMARY EXAMINER